

## **E. coli O157 Infection**

This leaflet is to tell you about E. coli O157 infection. This is potentially a very nasty infection indeed, both when you first get it and because it quite frequently causes long term health problems.

Now read on.....

### **What is E. coli O157 infection and how common is it?**

E. coli O157 is one of hundreds of strains of the bacterium Escherichia coli. Although most strains of E.coli are harmless and live in the intestines of healthy humans and animals, E .coli O157 produces a powerful toxin (poison) and can cause severe illness.

Very few E.coli O157 bacteria are required to start an infection and, unlike most other food poisoning germs, it does not need to grow on food first to be able to cause illness; simple contamination of food is enough.

There are about 1000 cases a year nationwide, about 90% of which apparently occur as single cases, unrelated to any other.

The peak season for the infection is August to September.

### **How is E. coli O157 caught?**

Sources include:

- Contaminated food
- Other people with the illness.
- Farm visits.
- Other contact with animals.

#### *Beef*

Beef and minced beef, including burgers, is commonly associated with infection in humans as E.coli O157 can live within cattle without causing them any harm. The germs contaminate the surface of the meat during slaughter. Minced beef is a particular problem as when the beef is minced, it distributes germs throughout the meat.

Solid pieces of beef such as steaks and joints pose much less of a hazard. The germs stay on the surface of the meat and are killed during cooking. However, this does not apply to rolled joints and care should be taken to cook these thoroughly.

#### *Milk*

Faecal material unavoidably gets into milk during milking but pasteurisation (heat-treatment) destroys all harmful germs in it, including E.coli O157. Over 95% of all milk and milk products in the UK are pasteurised at some point in the production process, thus making them safe.

Unpasteurised milk does pose a hazard as it undergoes no heat-treatment process.

### *Other foods*

Any food contaminated with *E. coli* O157 can cause illness unless it is cooked sufficiently to kill the germ. This is why a number of outbreaks have been traced to foods like fruits and vegetables. In the United States, an outbreak involving unpasteurised fruit juice was linked to contamination from cattle grazing in orchards.

### **What are the symptoms of *E. coli* O157 infection?**

*E. coli* O157 infection usually causes severe bloody diarrhoea and abdominal cramps. Some people do not have blood in their diarrhoea and some even have no symptoms at all.

There is usually little or no temperature and the illness is over in 5 to 10 days.

### **Are there any longer term complications of *E. coli* O157 infection?**

In some persons, particularly children under 5 years of age and the elderly, the infection can cause a complication called haemolytic uraemic syndrome (HUS) in which the red blood cells are destroyed and the kidneys fail. About 2 to 7% of infections lead to this complication. Indeed, HUS is now the commonest cause of acute kidney failure in children, and most cases of HUS are caused by *E. coli* O157 infection.

For people with HUS, even if they survive the first phase of the illness, their kidneys may fail progressively. Over time, this may lead to the development of high blood pressure and eventually the need for dialysis or a kidney transplant.

### **How do you know if you have got *E. coli* O157**

Many different kinds of infections can cause diarrhoea, with or without blood. *E. coli* O157 infection can therefore only be diagnosed by detecting the germ within a stool sample in a laboratory. Anyone who suddenly develops bloody diarrhoea will have any stool specimen tested for this germ.

### **How is *E. coli* O157 infection treated?**

Most people recover without antibiotics or other specific treatment in 5 to 10 days. There is no evidence that antibiotics improve the course of the disease, and it is thought that treatment with some antibiotics may precipitate kidney complications. Antidiarrhoeal medicines should be avoided.

### **What can I do to prevent *E. coli* O157 infection? What can I do if I have it?**

The big problem is that a variety of animals can carry this germ with no effects on themselves. It is not feasible yet, and may never be, to eradicate the organisms from food animals.

As there are no tests on live animals which prove that they are free from infection, contact with animals is a problem. For farms that operate visits for children, there are a number of measures involving cattle management, site layout and facilities that can control the risk of infection. These precautions, together with washing hands after handling animals, go some way to reducing the risk to young children visiting the farm.

Unfortunately, other animals such as dogs and birds can carry E. coli O157 so just dealing with the farm animals does not ensure an E. coli O157-free farm. The germ also survives for months on pasture.

There is no vaccine to prevent E. coli O157 infection, not do you become immune with repeated exposure, so avoiding infection is very much in your own hands.

- Cook all minced beef and joints thoroughly. The juices that come out when the beef is stabbed should not be pink.
- If you are served an undercooked beefburger or other minced beef product in a restaurant, send back with the rest of the meal as well.
- Keep raw meat separate from ready-to-eat foods to avoid cross-contamination - remember how few germs are needed to cause illness
- Wash hands, work surfaces and utensils with hot soapy water after handling raw meat.
- Never place cooked or ready-to-eat food on the unwashed plate that held raw meat.
- Drink only pasteurised milk and fruit juices. Most commercial juices and concentrates are pasteurised or otherwise heat treated to kill disease-causing germs.
- Wash fruit and vegetables thoroughly, especially those that will not be cooked.
- Make sure that persons with diarrhoea, especially children, wash their hands carefully with soap after bowel movements to reduce the risk of spreading infection.
- Carefully clean all cutting boards, work surfaces and utensils with detergent and hot water after preparing raw meats. Use separate chopping boards for raw and ready-to-eat foods wherever possible.
- Avoid consuming unpasteurised milk or water that may be polluted. The clear hillside stream may be tempting on a hot summer's day but looks can be deceptive.
- If you have the illness and work with children or the elderly, or work in a hospital or a food business, advise your supervisor. Your local Environmental Health Department, who can investigate to try and prevent further cases, may contact you.

### **Small print about E. coli O157 infection (Optional)**

E. coli O157 was first recognised as a cause of illness in the 1980s. Initial outbreaks were traced most commonly to beefburgers.

Although most infections are still linked to undercooked minced beef, it is now recognised that many other contaminated foods can convey the infection because the number of O157 germs needed to cause illness is so low.

The combination of letters and numbers in the name relate to the way the organism is identified in the laboratory.

Produced by the Suffolk Health Authority and Suffolk Local Authorities working in partnership

Suffolk Health, St Edmundsbury B.C, Suffolk Coastal D.C, Babergh D.C, Forest Heath D.C, Ipswich B.C, Mid-Suffolk D.C and Waveney D.C.